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Test 1922: John Deere 7230 Diesel

Nebraska Tractor Test Laboratory

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NEBRASKA OECD TRACTOR TEST 1922—SUMMARY 592

JOHN DEERE 7230 AUTOQUAD-PLUS DIESEL

24 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW/h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1036 rpm)					
111.97 (83.50)	2301	7.25 (27.44)	0.454 (0.276)	15.45 (3.04)	
Standard Power Take-off Speed (1000 rpm)					
118.09 (88.06)	2220	7.42 (28.10)	0.441 (0.268)	15.91 (3.13)	
Maximum Power (1 hour)					
126.93 (94.65)	2000	7.70 (29.13)	0.425 (0.259)	16.49 (3.25)	

VARYING POWER AND FUEL CONSUMPTION

111.97 (83.50)	2301	7.25 (27.44)	0.454 (0.276)	15.45 (3.04)	Air temperature
98.47 (73.43)	2381	6.85 (25.92)	0.487 (0.297)	14.38 (2.83)	81°F (27°C)
75.34 (56.18)	2412	5.88 (22.25)	0.547 (0.333)	12.82 (2.53)	Relative humidity
50.31 (37.52)	2443	4.91 (18.58)	0.684 (0.416)	10.25 (2.02)	9%
25.75 (19.20)	2460	4.14 (15.66)	1.126 (0.685)	6.22 (1.23)	Barometer
1.64 (1.23)	2460	3.01 (11.39)	12.836 (7.808)	0.55 (0.11)	28.97" Hg (98.10 kPa)

Maximum torque - 369 lb.-ft. (500 Nm) at 1701 rpm

Maximum torque rise - 44.3%

Torque rise at 1800 engine rpm - 43%

Power increase at 2000 engine rpm - 13.3%

DRAWBAR PERFORMANCE

UNBALLASTED - FRONT DRIVE ENGAGED

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW/h/l)	Temp. °F cool- ing med	Temp. °C Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—11th (C3) Gear									
102.19 (76.20)	6740 (29.98)	5.69 (9.15)	2297	2.29	0.494 (0.300)	14.19 (2.80)	186 (86)	72 (22)	28.16 (95.36)
75% of Pull at Maximum Power—11th (C3) Gear									
80.37 (59.93)	5026 (22.36)	6.00 (9.65)	2398	1.68	0.556 (0.338)	12.61 (2.48)	181 (83)	71 (22)	28.26 (95.70)
50% of Pull at Maximum Power—11th (C3) Gear									
54.38 (40.55)	3340 (14.86)	6.11 (9.83)	2430	1.24	0.670 (0.408)	10.46 (2.06)	176 (80)	71 (22)	28.27 (95.73)
75% of Pull at Reduced Engine Speed—13th (C4) Gear									
80.48 (60.01)	5004 (22.26)	6.03 (9.71)	1969	1.70	0.503 (0.306)	13.94 (2.75)	180 (82)	71 (22)	28.28 (95.77)
50% of Pull at Reduced Engine Speed—13th (C4) Gear									
54.93 (40.96)	3355 (14.92)	6.14 (9.88)	1995	1.22	0.590 (0.359)	11.87 (2.34)	175 (79)	71 (22)	28.27 (95.73)

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832

Dates of tests: March 25-May 5, 2008

Manufacturer: John Deere Tractor Works, 3500 East Donald Street, P.O. Box 270, Waterloo Ia, 50704-0270

FUEL, OIL and TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8419 Fuel weight 7.010 lbs/gal (0.840 kg/l) Oil SAE 15W-40 API service classification CJ-4 Transmission and hydraulic lubricant John Deere Hy-Gard fluid Front axle lubricant John Deere Hy-Gard fluid Total time engine was operated: 65.0 hours

ENGINE: Make John Deere Diesel Type six cylinder vertical with turbocharger and intercooler Serial No.*PE6068L026110* Crankshaft lengthwise Rated engine speed 2300 Bore and stroke 4.19 x 5.00" (106.5 mm x 127.0 mm) Compression ratio 17.0 to 1 Displacement 414 cu in (6788 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements and aspirator Oil filter one full flow cartridge Oil cooler engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil Fuel filter one paper element and prestrainer Fuel cooler radiator for pump return fuel Muffler vertical Cooling medium temperature control 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 46.7 - 51.4 lb/h (21.2 - 23.3 kg/h) High idle: 2410 - 2510 rpm Turbo boost: nominal 12.3 - 13.8 psi (85 - 95 kPa) as measured 13.2 psi (91 kPa)

CHASSIS: Type front wheel assist Serial No.*RW7230K004376* Tread width rear 63.0" (1601 mm) to 85.7" (2178 mm) front 59.4" (1510 mm) to 88.0" (2235 mm) Wheelbase 104.3" (2650 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio with partial (4) range operator controlled power shift Nominal travel speeds mph (km/h) first 1.01 (1.63) second 1.22 (1.96) third 1.45 (2.34) fourth 1.78 (2.87) fifth 2.47 (3.97) sixth 2.97 (4.78) seventh 3.55 (5.72) eighth 4.02 (6.47) ninth 4.35 (7.00) tenth 4.84 (7.79) eleventh 5.79 (9.32) twelfth 6.59 (10.61) thirteenth 7.10 (11.42) fourteenth 7.94 (12.77) fifteenth 9.51 (15.30) sixteenth 10.71 (17.24) seventeenth 11.64 (18.74) eighteenth 12.89 (20.75) nineteenth 14.47 (23.28) twentieth 15.45 (24.86) twenty-first 17.41 (28.02) twenty-second 18.93 (30.46) twenty-third 20.85 (33.56) twenty-fourth 25.55 (41.11)

DRAWBAR PERFORMANCE **UNBALLASTED - FRONT DRIVE ENGAGED - 2300 RPM** **MAXIMUM POWER IN SELECTED GEARS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Temp. °F (°C) cool- ing med Air dry bulb	Barom. inch Hg (kPa)		
6th(B2) Gear									
92.76 (69.17)	12442 (55.35)	2.80 (4.50)	2367	9.18	0.540 (0.328)	12.99 (2.56)	186 (85)	74 (23)	28.17 (95.39)
7th(B3)Gear									
100.02 (74.58)	11148 (49.59)	3.36 (5.41)	2305	6.01	0.499 (0.304)	14.04 (2.77)	188 (87)	78 (26)	28.19 (95.46)
8th(C1)Gear									
102.53 (76.46)	9951 (44.27)	3.86 (6.22)	2307	4.43	0.498 (0.303)	14.08 (2.77)	188 (87)	79 (26)	28.19 (95.46)
9th (B4) Gear									
100.37 (74.85)	8960 (39.86)	4.20 (6.76)	2306	3.80	0.504 (0.307)	13.90 (2.74)	188 (87)	79 (26)	28.21 (95.53)
10th(C2)Gear									
101.70 (75.84)	8101 (36.03)	4.71 (7.58)	2306	3.05	0.502 (0.305)	13.98 (2.75)	188 (87)	79 (26)	28.20 (95.50)
11th (C3) Gear									
102.19 (76.20)	6740 (29.98)	5.69 (9.15)	2297	2.29	0.494 (0.300)	14.19 (2.80)	186 (86)	72 (22)	28.16 (95.36)
12th(D1)Gear									
103.37 (77.08)	5953 (26.48)	6.51 (10.48)	2302	2.07	0.496 (0.301)	14.14 (2.79)	189 (87)	79 (26)	28.21 (95.53)
13th (C4) Gear									
100.33 (74.82)	5365 (23.86)	7.01 (11.29)	2292	1.82	0.506 (0.308)	13.85 (2.73)	186 (85)	74 (23)	28.22 (95.56)
14th(D2)Gear									
100.42 (74.88)	4776 (21.24)	7.89 (12.69)	2306	1.62	0.494 (0.300)	14.20 (2.80)	189 (87)	78 (26)	28.22 (95.56)
15th(D3)Gear									
104.49 (77.92)	4155 (18.48)	9.43 (15.18)	2292	1.44	0.487 (0.296)	14.40 (2.84)	188 (87)	72 (22)	28.23 (95.60)

reverse 1.06 (1.70), 1.27 (2.04), 1.52 (2.45), 1.86 (3.00), 2.58 (4.15), 3.09 (4.98), 3.71 (5.97), 4.19 (6.75), 4.54 (7.31), 5.05 (8.13), 6.05 (9.73), 6.88 (11.07), 7.41 (11.92), 8.28 (13.33), 9.92 (15.96), 11.19 (18.00), 12.16 (19.57), 13.46 (21.66), 15.11 (24.31), 16.13 (25.95), 18.18 (29.26), 19.75 (31.78), 21.77 (35.03), 26.66 (42.91) **Clutch** wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2143 engine rpm or 1000 rpm at 2208 engine rpm **Unladen tractor mass** 12755 lb (5786 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests the fuel temperature at the injection pump inlet was maintained at 132°F (55°C). This tractor did not meet the manufacturer's 3 point lift claim of 7450 lb (3379 kg), with 75 mm cylinders. The manufacturer's claim of 35% torque rise, with the 2V-CR PowerTech E engine, was not verified. The performance figures on this summary were taken from a test conducted under the OECD Code II test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1922**, Nebraska Summary 592, September 17, 2008.

Roger M. Hoy
Director

M.F. Kocher
V.I. Adamchuk
J.A. Smith
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Comfortgard Cab	Premium cab
	2WD dB(A)	Front Wheel Drive Engaged dB(A) Disengaged dB(A)
At no load in 9th (B4) gear	69.1	70.1 70.1
Transport speed - no load - 24th (F4) gear	71.6	73.2
Bystander in 24th (F4) gear		81.4

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires - No., size, ply & psi(kPa)	Two 480/80R42;***;13(90)	Two 480/80R42;***;12(85)
Ballast - Liquid (total)	None	None
- Cast Iron (total)	1265 lb (574 kg)	None
Front Tires - No., size, ply & psi(kPa)	Two 380/85R30;***;14(95)	Two 380/85R30;***;10(70)
Ballast - Liquid (total)	None	None
- Cast Iron (total)	880 lb (399 kg)	None
Height of Drawbar	22.0 in (560 mm)	21.0 in (535 mm)
Static Weight with operator - Rear	9075 lb (4116 kg)	8055 lb (3654 kg)
- Front	6000 lb (2722 kg)	4875 lb (2211 kg)
- Total	15075 lb (6838 kg)	12930 lb (5865 kg)

DRAWBAR PERFORMANCE
UNBALLASTED - FRONT DRIVE ENGAGED - 2000 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
6th(B2)Gear									
93.14 (69.46)	12532 (55.74)	2.79 (4.49)	2360	9.25	0.539 (0.328)	13.01 (2.56)	184 (85)	74 (23)	28.17 (95.39)
7th(B3)Gear									
101.21 (75.47)	12012 (53.43)	3.16 (5.09)	2238	8.95	0.508 (0.309)	13.80 (2.72)	190 (88)	79 (26)	28.19 (95.46)
8th(C1)Gear									
107.96 (80.51)	11788 (52.43)	3.43 (5.53)	2141	8.18	0.492 (0.300)	14.24 (2.80)	192 (89)	80 (27)	28.20 (95.50)
9th(B4)Gear									
110.12 (82.11)	11664 (51.89)	3.54 (5.70)	1997	7.25	0.491 (0.299)	14.28 (2.81)	190 (88)	74 (23)	28.22 (95.56)
10th(C2)Gear									
113.53 (84.66)	10605 (47.17)	4.01 (6.46)	2000	5.23	0.474 (0.289)	14.78 (2.91)	192 (89)	79 (26)	28.20 (95.50)
11th(C3)Gear									
117.07 (87.30)	8934 (39.74)	4.91 (7.91)	2002	3.32	0.459 (0.279)	15.27 (3.01)	191 (89)	72 (22)	28.17 (95.39)
12th(D1)Gear									
116.82 (87.11)	7818 (34.77)	5.60 (9.02)	1993	2.82	0.464 (0.282)	15.11 (2.98)	191 (89)	79 (26)	28.21 (95.53)
13th(C4)Gear									
114.89 (85.68)	7076 (31.48)	6.09 (9.80)	2003	2.41	0.468 (0.285)	14.98 (2.95)	192 (89)	73 (23)	28.23 (95.60)
14th(D2)Gear									
115.41 (86.06)	6339 (28.20)	6.83 (10.99)	2002	2.16	0.466 (0.283)	15.05 (2.97)	192 (89)	76 (24)	28.22 (95.56)
15th(D3)Gear									
116.55 (86.91)	5319 (23.66)	8.22 (13.22)	2004	1.75	0.462 (0.281)	15.17 (2.99)	192 (89)	71 (22)	28.23 (95.60)

DRAWBAR PERFORMANCE
BALLASTED - FRONT DRIVE ENGAGED - 2000 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
5th(B1) Gear									
90.92 (67.80)	14678 (65.29)	2.32 (3.74)	2373	9.30	0.538 (0.327)	13.02 (2.57)	178 (81)	50 (10)	28.56 (96.71)
6th(B2) Gear									
101.54 (75.72)	14017 (62.35)	2.72 (4.37)	2260	7.51	0.496 (0.302)	14.13 (2.78)	179 (81)	56 (13)	28.53 (96.61)
7th(B3) Gear									
111.59 (83.21)	13574 (60.38)	3.08 (4.96)	2118	6.52	0.474 (0.288)	14.78 (2.91)	180 (82)	58 (14)	28.51 (96.55)
8th(C1) Gear									
114.87 (85.66)	12991 (57.79)	3.32 (5.34)	1999	5.79	0.468 (0.285)	14.97 (2.95)	182 (83)	61 (16)	28.48 (96.44)
9th(B4) Gear									
112.22 (83.68)	11601 (51.60)	3.63 (5.84)	1994	4.58	0.488 (0.297)	14.36 (2.83)	191 (88)	75 (24)	28.45 (96.34)
10th(C2) Gear									
116.79 (87.09)	10744 (47.79)	4.08 (6.56)	1996	3.61	0.463 (0.282)	15.14 (2.98)	186 (85)	65 (18)	28.46 (96.38)
11th(C3) Gear									
117.31 (87.48)	8898 (39.58)	4.94 (7.96)	2001	2.62	0.452 (0.275)	15.50 (3.05)	190 (88)	73 (23)	28.46 (96.38)
12th(D1) Gear									
116.79 (87.09)	7776 (34.59)	5.63 (9.06)	1993	2.16	0.461 (0.280)	15.20 (2.99)	192 (89)	76 (24)	28.43 (96.28)
13th(C4) Gear									
114.99 (85.75)	7094 (31.55)	6.08 (9.78)	1993	1.88	0.466 (0.284)	15.03 (2.96)	194 (90)	78 (26)	28.38 (96.11)
14th(D2) Gear									
116.08 (86.56)	6390 (28.42)	6.81 (10.96)	1991	1.63	0.465 (0.283)	15.07 (2.97)	195 (90)	76 (24)	28.40 (96.17)
15th(D3) Gear									
116.28 (86.71)	5298 (23.57)	8.23 (13.25)	2002	1.27	0.464 (0.282)	15.12 (2.98)	192 (89)	79 (26)	28.35 (96.00)

DRAWBAR PERFORMANCE
BALLASTED - FRONT DRIVE DISENGAGED
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp.°F cool- ing med	°C Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—8th (C1) Gear									
101.41 (75.62)	9966 (44.33)	3.82 (6.14)	2299	5.69	0.502 (0.305)	13.96 (2.75)	180 (82)	62 (17)	28.47 (96.41)
75% of Pull at Maximum Power—8th (C1) Gear									
81.79 (60.99)	7509 (33.40)	4.08 (6.57)	2397	3.17	0.549 (0.334)	12.78 (2.52)	186 (85)	79 (26)	28.34 (95.97)
50% of Pull at Maximum Power—8th (C1) Gear									
56.03 (41.78)	5006 (22.27)	4.20 (6.76)	2430	1.85	0.661 (0.402)	10.61 (2.09)	180 (82)	79 (26)	28.32 (95.90)
75% of Pull at Reduced Engine Speed—11th (C3) Gear									
81.84 (61.03)	7475 (33.25)	4.11 (6.61)	1670	3.15	0.485 (0.295)	14.46 (2.85)	182 (83)	80 (27)	28.30 (95.83)
50% of Pull at Reduced Engine Speed—11th (C3) Gear									
55.71 (41.54)	5001 (22.25)	4.18 (6.72)	1678	1.88	0.523 (0.318)	13.41 (2.64)	174 (79)	80 (27)	28.31 (95.87)
MAXIMUM POWER IN SELECTED GEARS									
6th (B2) Gear									
84.59 (63.08)	11259 (50.08)	2.82 (4.53)	2385	9.12	0.556 (0.338)	12.61 (2.48)	178 (81)	52 (11)	28.55 (96.68)
7th (B3) Gear									
96.92 (72.27)	10880 (48.40)	3.34 (5.38)	2347	8.60	0.521 (0.317)	13.46 (2.65)	179 (82)	60 (16)	28.50 (96.51)
8th (C1) Gear									
101.41 (75.62)	9966 (44.33)	3.82 (6.14)	2299	5.69	0.502 (0.305)	13.96 (2.75)	180 (82)	62 (17)	28.47 (96.41)
9th (B4) Gear									
98.65 (73.57)	8882 (39.51)	4.17 (6.70)	2290	4.60	0.509 (0.309)	13.78 (2.72)	188 (87)	74 (23)	28.46 (96.38)
10th (C2) Gear									
100.16 (74.69)	8022 (35.68)	4.68 (7.54)	2294	3.69	0.501 (0.305)	13.98 (2.75)	185 (85)	71 (22)	28.46 (96.38)
11th (C3) Gear									
102.29 (76.28)	6785 (30.18)	5.65 (9.10)	2291	2.78	0.494 (0.300)	14.20 (2.80)	186 (85)	72 (22)	28.46 (96.38)
12th (D1) Gear									
101.82 (75.92)	5910 (26.29)	6.46 (10.40)	2289	2.34	0.493 (0.300)	14.22 (2.80)	186 (85)	75 (24)	28.44 (96.31)
13th (C4) Gear									
99.04 (73.85)	5323 (23.68)	6.98 (11.23)	2290	2.01	0.510 (0.310)	13.74 (2.71)	189 (87)	77 (25)	28.39 (96.14)
14th (D2) Gear									
99.78 (74.40)	4765 (21.19)	7.85 (12.64)	2299	1.79	0.499 (0.303)	14.05 (2.77)	189 (87)	76 (24)	28.42 (96.24)
15th (D3) Gear									
102.63 (76.53)	4097 (18.22)	9.39 (15.12)	2290	1.49	0.499 (0.304)	14.05 (2.77)	189 (87)	78 (26)	28.37 (96.07)

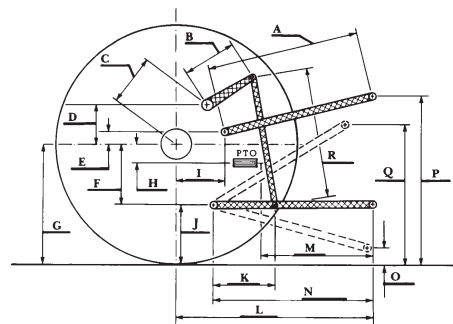
THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II, IIIN

Quick Attach: No

Maximum force exerted through whole range: 5110 lbs (22.7 kN)(75 mm cylinders)
6398 lbs (28.5 kN)(80 mm cylinders)
8262 lbs (36.8 kN)(90 mm cylinders)

	17.5 GPM pump	29 GPM pump
i) Sustained pressure at compensator cutoff:	2930 psi (202 bar)	2963 psi (204 bar)
	two outlet sets combined	
ii) Pump delivery rate at minimum pressure and rated engine speed:	18.4 GPM(69.6 l/min)	30.7 GPM(116.2 l/min)
iii) Pump delivery rate at maximum hydraulic power:	18.3 GPM(69.1 l/min)	30.4 GPM(115.0 l/min)
Delivery pressure:	2731 psi (188 bar)	2500 psi (172 bar)
Power:	29.1 HP (21.7 kW)	44.3 HP (33.0 kW)
	single outlet set	
ii) Pump delivery rate at minimum pressure and rated engine speed:	18.1 GPM(68.6 l/min)	29.8 GPM(112.8 l/min)
iii) Pump delivery rate at maximum hydraulic power:	18.0 GPM(68.2 l/min)	27.5 GPM(104.3 l/min)
Delivery pressure:	2518 psi (174 bar)	2198 psi (152 bar)
Power:	26.5 HP (19.7 kW)	35.3 HP (26.3 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	OECD test		SAE test	
	inch	mm	inch	mm
A	25.8	655	24.4	620
B	12.6	320	12.6	320
C	20.0	507	20.0	507
D	23.9	475	23.9	475
E	9.7	245	9.7	245
F	8.7	220	8.7	220
G	32.3	820	32.3	820
H	4.9	125	4.9	125
I	17.6	448	17.6	448
J	23.6	600	23.6	600
K	19.8	502	19.8	502
L	42.3	1076	42.3	1076
M	21.5	546	21.5	546
N	37.2	945	37.2	945
O	7.9	200	7.9	200
P	47.6	1210	42.6	1083
Q	34.6	880	34.6	880
R	31.3	795	31.3	795

THREE POINT HITCH PERFORMANCE (SAE static test)

Observed maximum pressure psi. (bar)	2990(206)				
Location:	lift cylinders				
Hydraulic oil temperature: °F (°C)	149(65)				
Location:	hydraulic sump				
Category:	II, IIIN				
Quick attach:	No				
System pressure 2545 psi (176 Bar)					
with lift cylinders 2 x 75 mm					
Hitch point distance to ground level in. (mm)	7.9(201)	14.9(379)	21.9(556)	28.9(735)	36.1(916)
Lift force on frame lb	6676	7154	7246	7032	6355
" " " " " " (kN)	(29.7)	(31.8)	(32.2)	(31.3)	(28.3)
with lift cylinders 2 x 80 mm					
Hitch point distance to ground level in. (mm)	7.9(201)	16.3(415)	23.9(608)	31.9(810)	40.0(1015)
Lift force on frame lb	15683	9566	9428	9212	8322
" " " " " " (kN)	(69.8)	(42.6)	(41.9)	(41.0)	(37.0)
with lift cylinders 2 x 90 mm					
Hitch point distance to ground level in. (mm)	8.0(203)	15.9(403)	23.9(606)	31.9(811)	40.0(1015)
Lift force on frame lb	18196	12491	12253	11980	10875
" " " " " " (kN)	(80.9)	(55.6)	(54.5)	(53.4)	(48.4)



JOHN DEERE 7230 DIESEL

Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln